A Snapshot of Leukemia

Incidence and Mortality Rate Trends

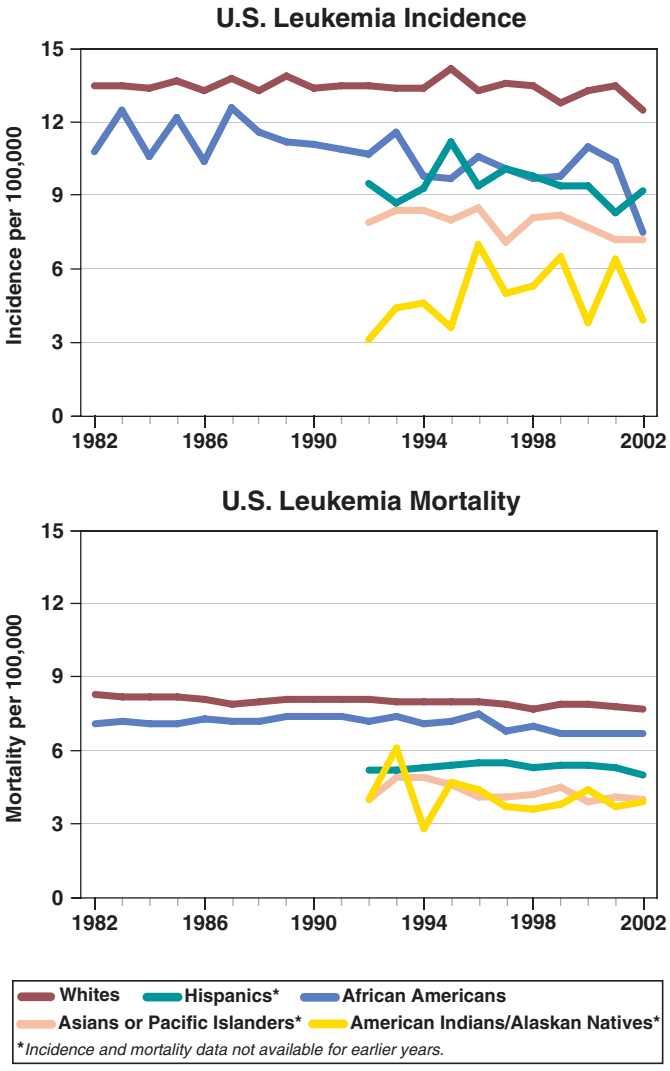
Leukemia, the most common blood cancer, encompasses multiple diseases including the four major types: acute lymphocytic leukemia (ALL), chronic lymphocytic leukemia (CLL), acute myelogenous leukemia (AML), and chronic myelogenous leukemia (CML). While leukemia affects approximately 10 times more adults than children, leukemia is the most common cancer among children, with ALL accounting for approximately 78 percent of all childhood leukemias. The most common type of leukemia in adults is AML, followed by CLL, CML, and ALL.

The incidence and mortality rates for all types of leukemia have not changed substantially over the last 20 years and are highest for Whites compared to other racial and ethnic groups. Overall, men are more susceptible to leukemias than women.

It is estimated that approximately $2.6 billion* is spent in the United States each year on treatment for leukemia.

*In 2004 dollars, as reported in Brown ML, Riley GF, Schussler N, and Etzioni RD. Estimating health care costs related to cancer treatment from SEER-Medicare data. *Medical Care* 2002 Aug; 40 (8 Suppl): IV-104-17.

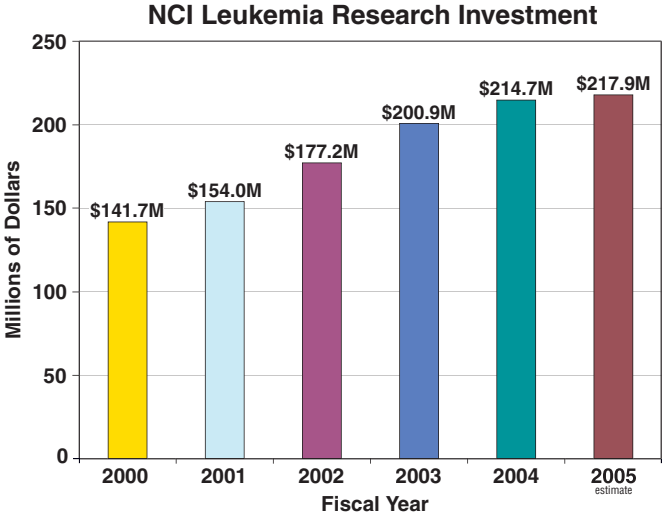
Source for incidence and mortality data: Surveillance, Epidemiology, and End Results (SEER) Program and the National Center for Health Statistics. Additional statistics and charts are available at: http://seer.cancer.gov/



Trends in NCI Funding for Leukemia Research

The National Cancer Institute's (NCI's) investment in leukemia research has increased from $141.7 million in fiscal year 2000 to an estimated $217.9 million in fiscal year 2005.

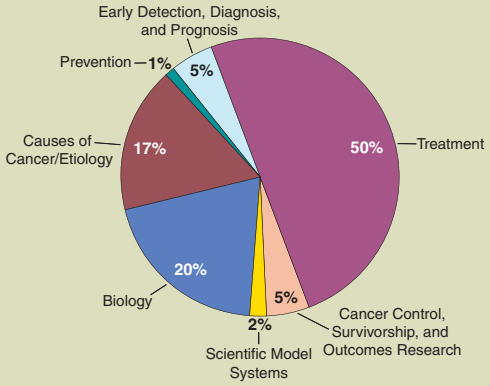
Source: NCI Financial Management Branch
http://www3.cancer.gov/admin/fmb



Examples of NCI Research Initiatives Relevant to Leukemia

- The leukemia-specific **Specialized Program of Research Excellence (SPORE)** is moving results from the laboratory to the clinical setting. http://spores.nci.nih.gov/current/leukemia/leukemia.html
- **NCI's Academic Public-Private Partnership Program (AP4)** supports the discovery of new therapeutic agents for cancer through partnerships among academia, industry, nonprofit institutions, and government entities. One of the planning grants will concentrate on orphan cancers including AML and ALL. http://dtp.nci.nih.gov/docs/ap4/ap4-index.jsp
- **Correlative Studies Using Specimens from Multi-Institutional Prevention and Treatment Trials** encourage collaborations that will move promising correlative markers into clinical trials. Current studies include genomic profiling of childhood AML and determining therapeutic responses of patients with large granular lymphocyte leukemia. http://grants.nih.gov/grants/guide/pa-files/PA-05-062.html
- The **CLL Research Consortium** has expanded its activities to include a familial registry, a fortified clinical infrastructure, and additional studies using the CLL mouse model for therapeutic evaluation of interventions. http://cll.ucsd.edu
- **Rapid Access to NCI Discovery Resources (RAND)** and **Rapid Access to Interventions Development (RAID)** support the discovery and development of novel therapeutics, including projects related to AML and myelodysplastic syndromes. http://dtp.nci.nih.gov

NCI Leukemia Research Portfolio



Percentage of Total Dollars by Scientific Area
Fiscal Year 2004

* Data on training grants are not included in this figure. A description of the relevant research projects can be found at the NCI Cancer Research Portfolio website at http://researchportfolio.cancer.gov.

- **NCI's Quick Trials for Novel Cancer Therapies** program speeds the translation of ideas developed in the laboratory into early-stage clinical studies. http://grants1.nih.gov/grants/guide/pa-files/PAR-04-155.html
- The **Mouse Models of Human Cancers Consortium** has developed six models available to the research community to study hematologic malignancies. http://emice.nci.nih.gov/mouse_models/organ_models/hema_models
- The **Leukemia Home Page** directs visitors to up-to-date information on leukemia treatment, prevention, genetics, causes, and other topics. http://www.cancer.gov/leukemia

Selected Opportunities for Advancement of Leukemia Research

- Investigate the roles of genetics, immune function, infectious agents, environmental toxins, and lifestyle factors in the development of leukemia to improve prevention strategies.
- Study the complex problem of tumor-host interactions in the development of hematologic malignancies.
- Understand the pathogenesis of all myeloid leukemias, pre-leukemias, and related disorders.
- Characterize the molecular and cellular pathways in leukemia cells and their microenvironment and use this knowledge to develop and validate molecular targets for prevention and treatment.